Standards of Public Land Health
Evaluation of 64028 EAST CEDAR HILL Allotment
[12/06/2006]

The Roswell Field Office conducted Rangeland Health Assessments at 8 study sites within East Cedar Hill, allotment #64028. These assessments evaluated Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of these field assessments. A summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
64028-#1-F099	X			X			N/A		
64028-#2-F098	X	*		X			N/A		
64028-#3-F100	X			X			N/A		
64028-#4-F101	X			X	*		N/A		
64028-#5-F102	X			X			N/A		
64028-#6-1-F103	X	*		X	*		N/A		
64028-#6-2-N018	X	*		X	*		N/A		
64028-#7-F104	X			X	*		N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for public land on East Cedar Hill, allotment #64028. Ten of these assessed soil site stability; 11 hydrologic function; and 13 biotic integrity. These qualitative assessments in conjunction with quantitative information gathered from previous data collected on 7 trend plot locations within this allotment were utilized to make rangeland health determinations. Quantitative evaluations are performed by the Roswell Field Office, which include some or all of the following: ground and vegetative cover and composition, production, frequency and ecological condition. These collections, which were initiated in the late 1970's/early 1980's, are scheduled and conducted approximately every 5 years.

There are eight study sites on this allotment. All were visited between April 21, 2007 and May 23, 2007. Two sites are Loamy CP-4; two are Deep Sand CP-2; one is a Sandy Loam CP-2; two are Very Shallow CP-4; and one is a Shallow Sand CP-2. The allotment contains eight pastures with study sites in seven. One pasture does not have a study site and pasture #6 contains two study sites. These sites are intended to serve as key areas for the pastures and provide an indication of rangeland health for the pastures and for the allotment.

Throughout the allotment, there is some departure from the respective ecological site descriptions in the three assessment categories (Soil/Site Stability, Hydrologic Function and Biotic Integrity). The greatest departure is in pasture #6 where site #1 (Deep Sand CP-2) shows two indicators that rate moderate to extreme. The site in pasture #2 (Loamy CP-4) shows several indicators that rate moderate. A more complete discussion of these conditions will follow. The rest of the allotment has soil conditions that show some degree of departure but are relatively stable. Throughout the allotment, there has been a shift in the expected plant community. The most dramatic shifts are in pastures #2 and #6. In all cases, the expected dominant grass groups have changed. In many cases, threeawns have become the dominant grasses.

All areas of the allotment are recovering from a severe drought. For many sites, data shows a clear improvement in herbaceous cover, litter cover and bare ground from previous years. It will likely require several normal or better than normal years for some areas to recover. Areas such as pasture #6 may not recover due to the increase in shrub / tree cover. Production is likely up in all pastures due to the above normal late season precipitation in 2006. Forage plants at the various sites appeared vigorous.

Invasive species is a concern throughout the allotment. Invasives include cholla, an unknown thistle, mesquite and juniper. Their presence and abundance varies and will be discussed in the site by site evaluations.

The allotment is used by sheep and cattle. Grazing use was noted in pastures 1, 5 and 7. In these pastures, overall use was generally light at the time of the visit, but use on desirable grasses such as black grama and blue grama was moderate to heavy. The entire allotment appears to be suitable habitat for mule deer, but according to the ESDs, some areas should be pronghorn habitat.

The following discussion is a site by site, pasture by pasture evaluation.

Pasture #1 with its study site was visited on April 21, 2007. This pasture contains approximately 1642 acres, most of which is private land. The site representing this pasture is located on private land and is within a Loamy CP-4 ecosite. According to GIS, other ecosites within this pasture include Shallow CP-2 and Very Shallow CP-4. Most of the pasture contains gently sloping, undulating terrain ranging from approximately 4200 to 4300 feet elevation. Livestock were not observed near the study site, but the area had been grazed. Overall use was light, but use on black grama was moderate to heavy.

Soil stability at the site was relatively high. All soil stability indicators rated either "slight to moderate" or "none to slight". Some soil loss has occurred as indicated by pedestalling, which was mostly limited to water flow patterns.

Hydrologic function was near what is expected for the site. Herbaceous cover is greater than expected for the ecosite. There was minimal displacement of litter; litter was evenly distributed throughout the study site.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite. There has been in a shift in the composition of grasses. Tobosa is the dominant grass. Black grama and blue grama are still well represented but below expected amounts. Threeawns are well above expected amounts. Invasive plants rates "slight to moderate" due to an apparent increase in cholla. Cholla are widely scattered throughout the site.

The site provides satisfactory habitat for pronghorn and mule deer. There was evidence of pronghorn use at the time of the visit.

Pasture #2 with its study site was visited on May 23, 2007. This pasture contains approximately 2424 acres and consists mostly of state and private land. The study plot is located on public land near the southwest corner of the pasture and is within a Loamy CP-4 ecosite. According to GIS, the bulk of the pasture is within a Shallow CP-2 ecosite. Loamy CP-2 and Very Shallow CP-4 are also represented. The pasture contains gently sloping, undulating terrain with flatter, loamy areas at the bottom of slopes and adjacent to drainages. Elevation ranges from approximately 4300 ft. to 4460 ft. The north part of the pasture is drained by Middle Arroyo. There was no apparent livestock use in the vicinity of the study plot.

Four soil stability indicators show a "moderate" departure from the ESD. While there were no rills or gullies evident, there has been significant sheet erosion in the area as indicated by the amount and extent of pedestalling and the extent of water flow patterns. The area is obviously recovering from severe drought. At the time of this site visit, bare ground was within the expected range for the site. In 2001, bare ground was much greater than expected for the site. Soil surface resistance to erosion has been reduced and soil loss has occurred.

Hydrologic function was rated similarly for the same reasons are stated above. The plant community and distribution is still recovering. Nearby areas have relatively dense stands of mesquite, which will likely affect hydrologic function in those invaded areas. In the vicinity of the study plot, herbaceous ground cover had recovered to within expected values on the ESD. Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". As stated above, the area appears to be recovering from severe drought. Old grass carcasses are evident throughout. New grasses have reestablished to the extent that cover and litter is as expected or slightly higher. Functional / Structural Groups rated "slight to moderate", but with the nearby mesquite invasion, this is trending to "moderate". Grass composition has changed, which could be due to the drought. Tobosa grass dominants the flatter sites. Black grama and blue grama are significantly reduced. Threeawns are greater than expected and broom snakeweed is much higher than expected. Overall production for the site was relatively high. Desirable forage grasses were vigorous and produced seed in 2006. Invasive plants rated "slight to moderate", but this is trending to moderate with the increase in mesquite. There is also an unknown thistle (Circium spp.) that is invading the site. Habitat for pronghorn remains satisfactory. Habitat for mule deer is satisfactory.

Pasture #3 with its study site was visited on May 23, 2007. This pasture contains approximately 2341 acres, most of which is public land, but there is also a large portion of private land. The

study plot is located on public land near the center of the pasture and is within a Sandy Loam CP-2 ecosite. According to GIS, the bulk of this pasture is a mixture of Sandy Loam CP-2 and Loamy CP-2. The pasture contains gently sloping, undulating terrain and ranges from approximately 4360 ft. to 4460 ft. in elevation. The northwest part of the pasture has a shrub/juniper woodland component. There was no apparent livestock use in the vicinity of the study plot at the time of the visit. All but one of the soil stability indicators rated either "slight to moderate" or "none to slight". There were no rills or gullies observed. Pedestals and Terracettes rated "moderate" due to slight active pedestalling and obvious signs of past pedestalling. There appeared to be a slight reduction in soil surface resistance to erosion throughout the site. Some soil loss has occurred. Soils are relatively well protected given the sandy nature of the site. The site appears to be in an upward trend.

Hydrologic function was rated similarly. Herbaceous and shrub cover were near expected as shown in the ESD.

Indicators assessing biotic integrity for the site mostly fell into "slight to moderate" or "none to slight". There has been a shift in the grass community. Gramas are deficient in the composition and threeawns are much greater than expected in the ESD. The area has transitioned to a threeawn dominated grassland with an increase in Yucca and broom snakeweed. Production was relatively high and estimated to be between 60 and 80% of potential production. Desirable forage grasses were able to produce seed in 2006, but the lack of grama grasses in the composition may suggest that past grazing use (timing, duration, intensity) may have limited the vigor and reproductive capability of these and other desirable forage grasses. Invasive Plants rated "moderate" due to the presence of an unknown thistle, which was scattered throughout the site. It appears to be increasing. One small juniper tree was observed on the site. Snakeweed has increased substantially from what is expected in the ESD. Decadence (not enough to rate "slight to moderate") was observed in many of the threeawn grasses.

The site remains satisfactory for pronghorn and is satisfactory for mule deer. Skunkbush (Rhus trilobata) had been browsed by deer. Pasture #4 with its study site was visited on April 21, 2007. This pasture contains approximately 878 acres, approximately 50% private and 50% public land. The study plot is located on public land in the southeast corner of the pasture and is within a Deep Sand CP-2 ecosite. Most of this pasture is within this ecosite. The pasture contains gently sloping, undulating terrain and ranges in elevation from approximately 4360 ft. to 4460 ft. A large portion of the pasture contains a shrub / juniper woodland component. There was no apparent livestock use in the vicinity of the study plot at the time of the visit.

All soil stability indicators rated either "slight to moderate" or "none to slight". There were no rills or gullies observed. There has been some soil loss as indicated by slight pedestalling.

Hydrologic function was rated similarly. Herbaceous ground cover was less than expected in the ESD and litter was greater than expected.

Indicators assessing biotic integrity for the site mostly fell into "slight to moderate" or "none to slight". Functional / Structural Groups rated "moderate" due to an increase in shinnery oak and yucca and a change in the grass community. Shinnery oak has increased to the maximum

allowed in the ESD. Bluestems and dropseeds should dominate the site. Bluestems are lacking. Dropseeds are much below expected and threeawns are higher than expected. There were no invasive plants noted at the site.

The site provides satisfactory habitat for pronghorn and mule deer.

Pasture #5 with its study site was visited on April 21, 2007. This pasture contains approximately 1828 acres. It consists mostly of public land with a lesser amount of private. The study plot is located on public land near the center of the pasture and is within a Very Shallow CP-4 ecosite. Most of this pasture is within this ecosite. The pasture contains gently sloping, undulating terrain and ranges in elevation from approximately 4300 ft. to 4500 ft. Sheep were in the pasture at the time of the visit. Grazing use was light.

All soil stability indicators rated either "slight to moderate" or "none to slight". There were no rills or gullies observed. There has been some soil loss as indicated by pedestalling. The site has a lot of surface rock that lends stability to the site.

Hydrologic function was rated similarly. Herbaceous ground cover was as expected in the ESD and litter was greater than expected. Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". There has been a shift in the grass community. Threeawns, particularly purple threeawn, now dominate the site. Black grama is still reasonably well represented, but other gramas are deficient. Invasive Plants rates "slight to moderate" due to cholla being widely scattered throughout the site. Production was good (60 - 80% of potential). Desirable grasses were vigorous and produced seed in 2006. However, the change in composition may suggest that past grazing use (timing, duration, intensity) may have limited the vigor and reproductive capability of desirable forage grasses.

The site provides satisfactory habitat for mule deer.

Pasture #6 has two study sites. Both were visited on April 21, 2007. This pasture contains approximately 1753 acres. It consists of mostly public land with about 130 acres of state. The pasture contains gently sloping, undulating terrain and ranges in elevation from approximately 4200 ft. to 4430 ft. Study site 64028 #6-1-F103 is within a Deep Sand CP-2 ecosite located within the east half of the pasture. This site, however, more closely fits a Deep Sand CP-3 ecosite. Study site #6-2-N018 is within a Shallow Sand CP-2 ecosite located near the southwest corner of the pasture. Livestock or grazing use was not observed at either site at the time of the visits. Much of the pasture consists of a shrub / juniper woodland component.

For site 64028 #6-1-F103, there were several soil stability indicators that rated "moderate". Due to its sandy nature, wind is likely affecting this site more than water. Even so, water flow patterns are lengthening and connecting. There is instability and deposition throughout the site. Past data indicates that bare ground has been greater than expected. Production of annual vegetation this spring allows this indicator to rate "moderate". Gullies are uncommon and are associated with the road passing through the site. Blowouts are uncommon, but wind deposition is evident, creating a hummocky appearance to the site. There has been some soil loss as indicated by pedestalling. Biotic crusts are mostly limited to protected areas.

Hydrologic function was rated similarly. Herbaceous ground cover was less than expected in the ESD and litter was greater than expected. Tree and shrub cover is higher that expected.

Two biotic integrity indicators show a moderate departure from the ESD (based on Deep Sand CP-3). Functional / Structural Groups rates "moderate" due to an increase in tree and shrub cover. Juniper can be expected on the site, but they appear to be increasing. Shrubs are almost double what is expected for the site. The composition of grasses has changed significantly from the ESD. Bluestems are absent. Dropseeds are well below expected. Threeawns are higher than expected. Hairy grama is much less than expected. Invasive Plants rated "moderate" due to an apparent increase juniper on the site and the presence and apparent increase in sandbur.

Even though 2006 was a good precipitation year, annual production was only estimated to be 40 - 60% of potential, and litter cover was somewhat less than expected. The ESD describes this ecosite as habitat for pronghorn. With the increase in shrubs and trees, much of the area is no longer suitable for pronghorn. It provides good habitat for mule deer.

For Site 64028 #6-2-N018, all but one of the soil stability indicators rated either "slight to moderate" or "none to slight". There were no rills or gullies observed. There some pedestalling. Bare ground was less than expected in the ESD. There has been some soil loss as indicated by pedestalling. Biotic crusts were rare and limited to protected areas.

Hydrologic function was rated similarly. Herbaceous ground cover and litter were less than expected in the ESD. Shrub and tree cover was greater than expected for the site.

Several biotic integrity indicators show a "moderate" departure from the ESD. 2006 had higher than normal late growing precipitation that allowed plants to be vigorous and productive. Even so, the site falls short of its production potential as indicated in the ESD. The data would indicate an even greater departure. Shrub cover is about four times what is expected for the site. There has been a substantial shift in the composition of grasses expected for the site. Threeawns are by far the dominant grasses. Gramas are substantially under represented in the composition. The remaining desirable grasses were vigorous and produced seed in 2006. However, the change in composition may suggest that past grazing use (timing, duration, intensity) may have limited the vigor and reproductive capability of desirable forage grasses. The ESD regards this ecosite as habitat for pronghorn. Much of this site is no longer suitable for pronghorn but does provide fair to good habitat for mule deer.

Pasture #7 with its study site was visited on April 21, 2007. This pasture contains approximately 1593 acres. It consists mostly of public land with lesser amounts of state and private. The study plot is located on public land near the center of the pasture and is within a Very Shallow CP-4 ecosite. Most of this pasture is within this ecosite. The pasture contains gently sloping, undulating terrain and ranges in elevation from approximately 4200 ft. to 4360 ft. Sheep and cattle were in the pasture at the time of the visit. Overall grazing use was light, but use on black grama and blue grama was moderate.

All soil stability indicators rated either "slight to moderate" or "none to slight". There were no rills or gullies observed. There has been some soil loss as indicated by pedestalling. The site has a lot of surface rock that lends stability to the site.

Hydrologic function was rated similarly. Herbaceous ground cover was as expected in the ESD and litter was greater than expected.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". There has been a shift in the grass community. Threeawns, particularly purple threeawn, now dominate the site. Black grama is still reasonably well represented, but other gramas are deficient. Invasive Plants rates "slight to moderate" due to cholla being widely scattered throughout the site. Production was good (60 - 80% of potential). Desirable grasses were vigorous and produced seed in 2006. However, the change in composition may suggest that past grazing use (timing, duration, intensity) may have limited the vigor and reproductive capability of desirable forage grasses.

The site provides satisfactory habitat for mule deer.

Recommendations: All study sites show a shift in composition within the grass community. Consider alternating or changing the timing and duration of grazing to allow desirable forage plants to re-establish and reproduce. Juniper encroachment is occurring is several pastures. Treatment (i.e. hand cutting or mechanical cutting) would help maintain the grassland condition. Mesquite is invading in various areas. These invasion areas are limited enough in size that treatment is still feasible and warranted.

Gullies are rare on the allotment and are associated with roads or other constructed features. All the roads within this allotment should be evaluated for this condition and corrective measures taken.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64028-#1-F099			
Legal Land Desc	NESE 19 0080S 0210E Meridian 23	Acreage	1292
Ecosite	070DY153NM LOAMY CP-4	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; DILLEY	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	CRB	Soil Taxon Name	CONGER
Texture Class	NM644 SIL	Soil Phase	CONGER-REAGAN
Texture Modifier	NM644 LOAM		

Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	A road passes through the site. No livestock were observed, but there was moderate to heavy use on black grama. There is evidence of pronghorn antelope.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Level site. Flow patterns are short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	Mostly within flow patterns.					
S H	Bare Ground					X
Comments:	Less than expected for the site.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:	Site is flat.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Some reduction throughout site, especially in interspaces.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some past loss as seen in relation to pedestals.					

H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Herbaceous ground cover is higher than expected in the ESD.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Tobosa is the dominant grass. Black grama is still well represented. Blue grama is fairly well represented.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Litter is higher than expected in the ESD.					
B	Annual Production					X
Comments:	Estimated to be greater than 80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla is widely scattered throughout the site. This could be moderate.					
B	Reproductive Capability of Perennial Plants					X
Comments:	It appears that there are no restrictions, however, black grama was moderately to heavily grazed.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout site, but discontinuous.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	4	7
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Site is nearly flat. Soils are relatively stable with little erosion. Pedestals are minimal and generally confined to flow patterns.	0	0	10
Hydrologic		0	0	11
Biotic	Production is good. Black grama is still well represented in the composition.	0	0	13

Site Notes: Soils are relatively stable. Production is good. Species diversity is still adequate, but site has shifted a bit. There is less black grama than is expected in the ESD. Cholla are increasing throughout the area.

Plants species encountered included:

Shrubs: GUSA2, OPUNT (cholla), Yucca. Forbs: Plantago spp., Verbena, Lesquerella (bladderpod), Circium spp., Allium Grasses: PLMU3, BOER, SCBR

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64028-#2-F098

Legal Land Desc	NWNE 19 0080S 0210E Meridian 23	Acreage	893
Ecosite	070DY153NM LOAMY CP-4	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON; DILLEY	Observation Date	05/23/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	

Soil Map Unit	CRB	Soil Taxon Name	CONGER
Texture Class	NM644 SIL	Soil Phase	CONGER-REAGAN
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	No current use. Site is next to pasture fence.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills					
S H	Water Flow Patterns			X		
Comments:	The flatter areas are deposition areas. Areas with some slope show soil loss. There is some instability throughout the area.					
S H	Pedestals and/or Terracettes			X		
Comments:	There are no terracettes, but pedestalling is throughout. Much of it is past, but active pedestalling is still apparent. In 2001, there was lots of bare ground.					
S H	Bare Ground					X
Comments:	Bare ground is currently within the expected limit, but it greatly exceeded the limit in 2001. Area is recovering from severe drought.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Litter is being displace by water and wind.					
S H B	Soil Surface Resistance to Erosion			X		

Comments:	Soil aggregate stability is low to moderate and appears to be reduced throughout the site. Area is recovering from severe drought.					
S H B	Soil Surface Loss or Degradation			X		
Comments:	There is a lot of pedestalling throughout the site. Soil loss has occurred in the plant interspaces as well as under canopies.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Currently, herbaceous cover is as expected for the site. In 2001, it was less than half of expected. The site is recovering, but bare areas are still contributing to reduced infiltration and increased runoff. There are relatively dense stands of mesquite nearby.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Some of the area is being affected by the increase in mesquite. Throughout the area, there has been a shift in grasses from expected. Tobosa dominates the grasses particularly in flatter areas. Threeawns are second. Black grama is still well represented but low compared to the ESD.					
B	Plant Mortality/Decadence					X
Comments:	There is no current mortality or decadence, but there is ample evidence of dead grasses from previous years.					
H B	Litter Amount					X
Comments:	Currently, it is slightly higher than expected. The area is recovering from a severe drought.					
B	Annual Production				X	
Comments:	Estimated to be between 60 and 80% of potential.					
B	Invasive Plants				X	
Comments:	Mesquite stands are nearby. Snakeweed is much higher than expected. Some thistles are invading.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desireable grasses made seed in 2006.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Scattered throughout site. Discontinuous.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer and antelope for now. Mesquites are moving in.					
B	Wildlife Populations				X	

Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	4	1	5
H	Hydrologic	0	0	4	2	5
B	Biotic	0	0	2	4	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soil resistance to erosion is reduced throughout the site. The site is recovering well in terms of annual production and grass cover.	0	4	6
Hydrologic		0	4	7
Biotic		0	2	11

Site Notes: The site is obviously recovering from severe drought. Grass carcasses are abundant. Bare ground in 2001 was 84%. Bare ground in 2005 was 23%. Soil loss has occurred as indicated by the amount of pedestalling. Soil resistance to erosion is reduced throughout the site. The site has recovered well in terms of annual production and grass cover. Species diversity is still adequate but the site and surrounding area has shifted in grass composition. Tobosa grass is the dominant grass, especially on the flatter areas. Black grama is still well represented, but is reduced from what is expected in the ESD. Mesquite is invading the site and is already well established in nearby areas.

Plants encountered included: shrubs: YUCCA, GUSA2, PRGL forbs: ERIGE, verbena, Plantago spp., croton, Solanum spp., others grasses: BOER, BOGR2, HIMU, HIJA, ARIST, ARPU, TRPI, SPCR, MUAR

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64028-#3-F100

Legal Land Desc	NESW 13 0080S 0200E Meridian 23	Acreage	1445
Ecosite	070BY054NM SANDY LOAM CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON; DILLEY	Observation Date	05/23/2007
County Soil Survey	NM632 LINCOLN	Soil Var/Taxad	
Soil Map Unit	003	Soil Taxon Name	BLAKENEY
Texture Class	NM632 FSL	Soil Phase	BLAKENEY-ARCH
Texture Modifier	NM632 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	No current use. A road passes through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills. Relatively flat, 0-3% slope.					
S H	Water Flow Patterns				X	
Comments:	Numerous flow patterns, but they are relatively stable and short.					
S H	Pedestals and/or Terracettes			X		

Comments:	There is slight active pedestalling and obvious past pedestalling. No terracettes.					
S H	Bare Ground					X
Comments:	Currently, bare ground is less than expected. It was higher than expected in 2001.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Litter is being displaced. There are small litter dams that are scattered.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Soil aggregate stability is moderate. There is no surface rock. There is some reduction in soil resistance to erosion especially in the interspaces.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Soil loss has occurred as indicated by pedestalling.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Herbaceous and shrub cover are near what is expected for the site.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	There is an increase in Yucca and snakeweed. The site is deficient in gramas and high in threeawns. The site has transitioned to a threeawn dominated grassland.					
B	Plant Mortality/Decadence					X
Comments:	Less than 20% of vegetation is decadent, but there is notable decadence in many of the threeawns.					
H B	Litter Amount				X	
Comments:	Litter is about what is expected for the site.					
B	Annual Production				X	
Comments:	Good production. 60 - 80% of potential.					
B	Invasive Plants			X		
Comments:	A thistle is scattered throughout the vicinity of the study plot. Snakeweed is much higher than expected. Yucca are increasing and are scattered through the area. Found 1 juniper.					
B	Reproductive Capability of					X

	Perennial Plants					
Comments:	No current restrictions. Grasses made seed in 2006.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Biotic crusts are minimal. Physical crusts are common in the interspaces.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer. Not as good for antelope.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	na					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	4	5
H	Hydrologic	0	0	1	5	5
B	Biotic	0	0	1	6	6

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	There has been some soil loss, but soils remain relatively stable. There is evidence of past and some active pedestalling.	0	1	9
Hydrologic		0	1	10

Biotic	The area has relatively good production. Plant diversity is still adequate, but there has been a shift in the plant community. It is now a threeawn dominated grassland. Invasive/increaser plants are becoming a concern with the increase in snakeweed, yucca and an unknown thistle.	0	1	12

Site Notes: Soils are relatively well protected and stable. However,there are numerous, well defined flow patterns and lots of pedestalling, but the site appears to be in an upward trend. Herbaceous ground cover is good. Littleleaf sumac (RHMI) and skunkbush (RHTR) are notable on the site. The skunkbush has a slightly hedged appearance from browing (by deer).

Yucca are increasing with numerous small yuccas scattered throughout. Snakeweed is much higher than expected for the site. An unknown thistle has become established and appears to be increasing throughout the site.

Sideoats grama is almost nonexistant. Threeawns dominate the site. Plant diversity is still adequate, but the site has transitioned to a threeawn dominated grassland.

Plants encountered included: shrubs: RHMI, RHTR, NOLIN, YUGL, YUCCA, GUSA2, OPUNT (cholla), MIAC, PRGL forbs: verbena, Lesquerella spp., other grasses: BOER, ARPU, ARIST, MUSQ, BOGR2, BOHI, PAHA, TRPI, MUAR, STCO, SPCR, HIMU, SIHY

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64028-#4-F101

Legal Land Desc	SWNW 24 0080S 0200E Meridian 23	Acreage	489
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; DILLEY	Observation Date	04/21/2007
County Soil Survey	NM632 LINCOLN	Soil Var/Taxad	
Soil Map Unit	075	Soil Taxon Name	ROSWELL
Texture Class	NM632 FS	Soil Phase	ROSWELL
Texture Modifier	NM632 FINE SAND,HUMMOCKY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg	9.73	NOAA Avg Growing	8.01

Annual Precipitation		Season Precipitation	
Disturbances and Animal Use:	A two track road passes through the site. The pasture fence and state highway are next to the site. No livestock use was evident. Deer are using the shinnery oak.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Site is mostly level. Flow patterns are short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	Active pedestalling is rare.					
S H	Bare Ground				X	
Comments:	Current bare ground is near expected. In recent years, it has been less than expected.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:	Fairly uniform distribution.					
S H B	Soil Surface Resistance to Erosion					X
Comments:	Low resistance to erosion is expected in this sandy site.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	There is some soil loss due to water and wind movement.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Ground cover is less than ESD.					
S H B	Compaction Layer					X
Comments:						

B	Functional/Structural Groups			X		
Comments:	Grass diversity is low. Dropseed and threeawns dominate the site, but dropseeds are much lower than expected and threeawns are higher. Shinnery oak and yucca are increasing.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:						
B	Annual Production				X	
Comments:	Between 60 - 80% of potential. Production due more to woody species than to grasses.					
B	Invasive Plants					X
Comments:	Shinnery oak is expected, but it has increased to near the maximum allowed for the site.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desireable grasses made seed.					
S	Physical/Chemical/Biological Crusts				X	
Comments:						
B	Wildlife Habitat					X
Comments:	Good for deer. There are deer in the area. The ESD describes this site as habitat for pronghorn antelope not mule deer. With antelope in mind, this site would likely rate moderate.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight

S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	5	6
B	Biotic	0	0	1	3	9

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with only minimal soil loss.	0	0	10
Hydrologic		0	0	11
Biotic	Biotic indicators are still high, but the trend is likely downward due to the increase in shinnery oak. Functional / Structural groups rated moderate due to the increase in shrubs and a decrease in grass diversity and a shift in composition from the ESD.	0	1	12

Site Notes: Soils are relatively stable. There has been some soil loss as indicated by pedestalling in the flow patterns. Shinnery oak has increased to the maximum allowed in the ESD. Yucca is increasing. Bluestems and dropseeds should dominate the site. Bluestems are lacking. Dropseeds are much below expected and threeawns are higher than expected. The area provides satisfactory habitat for mule deer and remains satisfactory for antelope.

Plant species encountered included:

shrubs: shinnery oak (QUHA), littleleaf sumac (RHMI), juniper, YUEL forbs: tower mustard, verbena, SPHAER, ASTRAG, CRYTAN grasses: BOER, BOGR2, BOHI, ARIST, ARPU, ARDI, SPOROB

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64028-#5-F102

Legal Land Desc	SWNW 25 0080S 0200E Meridian 23	Acreage	935
Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON; REBITZKI	Observation Date	04/21/2007
County Soil Survey	NM632 LINCOLN	Soil Var/Taxad	

Soil Map Unit	016	Soil Taxon Name	ECTOR
Texture Class	NM632 GR-L	Soil Phase	ECTOR-KIMBROUGH
Texture Modifier	NM632 VERY COBBLY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Sheep are in the pasture. Grazing use was light at the time. A county road passes through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Lots of surface rock. Flow patterns are short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	Trending toward moderate. No terracettes, but pedestals are common.					
S H	Bare Ground					X
Comments:	Less than expected. Lots of surface rock.					
S H	Gullies					X
Comments:	None observed on site or traveling to site.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Some displacement, but also well distributed.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate aggregate stability. Surface rock adds stability to the site. There is some					

	loss of resistance in the interspaces.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	There is some soil loss as indicated by pedestals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Relatively good herbaceous cover considering the rock. Herbaceous cover appears higher than recorded in 2005 which was 14%.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Grass composition has changed. Threeawns are dominant, particularly purple threeawn. Black and hairy grama are reasonably represented.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Higher than expected. (10% vs 1%)					
B	Annual Production				X	
Comments:	Estimated between 60 - 80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla are widely scattered throughout the site. This could go moderate.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desireable grasses had produced seed. No apparent restrictions.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Good biotic crusts, but not continuous.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	5	6
B	Biotic	0	0	0	6	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable. There is some soil loss as indicated by plant pedestals, but pedestals are typically short. The site is well armored with surface rock.	0	0	10
Hydrologic		0	0	11
Biotic	Biotic integrity is relatively good. Production is good; litter amount is good. There has been a shift in grass composition. The area has transitioned to a threeawn dominated grassland.	0	0	13

Site Notes: Soils on this site are relatively stable. The large amount of surface rock lends stability to the site. There has been some soil loss as indicated by the presence of plant pedestals. Pedestals are common throughout, which almost pushed this indicator to moderate. Grass composition has changed according to the ESD but the transition does not fit those described in the ESD. Threeawns are the dominant grass. Cholla are widely scattered throughout, not necessarily concentrated in disturbed areas.

Plants encountered included:

shrubs: GUSA2, OPUNT (cholla and prickly pear), NOLINA, MIAC, DAFO forbs: white aster, SOLANUM spp., ALLIUM spp., others grasses: ARIST, ARPU, BOGR2, BOER, PAHA, STCO, TRPI, ERPU8, SPCR

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64028-#6-1-F103			
Legal Land Desc	NWNW 5 0090S 0210E Meridian 23	Acreage	877
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; DILLEY	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	IBB	Soil Taxon Name	IMA
Texture Class	NM644 FS	Soil Phase	IMA-BLAKENEY
Texture Modifier	NM644 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	No evident livestock use. Oak is browed by deer. A road passes through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns			X		
Comments:	Flow patterns are starting to lengthen and connect. There is instability and deposition occurring.					
S H	Pedestals and/or Terracettes			X		
Comments:	There is some active pedestalling due to loose sand.					
S H	Bare Ground			X		
Comments:	Past data indicates that bare ground exceeds expected. Current production of annual					

	grasses and forbs reduces bare ground down to what is expected for the site (35%). Spring moisture has been good. With less litter cover, this would rate moderate to extreme.					
S H	Gullies				X	
Comments:	Gullies are forming along the road.					
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:	Some blowouts are present but uncommon. Deposition mounds are common throughout and are relatively stable.					
H	Litter Movement				X	
Comments:	Litter is being displaced.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	There is a slight reduction throughout the site. Bare ground is close to expected; litter is less than expected; ground cover is less than expected.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	There is soil loss by water and wind as indicated by pedestals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Herbaceous ground cover is less than expected in the ESD. Bare ground is near expected. Tree and shrub cover is higher that expected. Plant cover changes are having a minor effect at this time. This is trending toward moderate.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	There is an apparent increase in tree and shrub cover. Trees are not expected for the site, but this site is an anomaly and better fits with a Deep Sand CP-3 where junipers would be expected. Shrubs are almost double what is expected for the site. Composition of grasses has changed significantly from the ESD. Bluestems are absent. Dropseeds are well below expected. Threeawns are higher than expected. Hairy grama is much less than expected. Sandbur appears to be increasing.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:	Data indicates it has been well below the amount expected in the ESD, but production of spring annuals bring the litter value up to near the expected amount.					
B	Annual Production			X		
Comments:	2006 was a productive year with higher than normal precip. in late summer and fall.					

	Total production is estimated to be 40- 60% of potential.					
B	Invasive Plants			X		
Comments:	This site is an anomaly and more closely fits a Deep Sand CP-3 ecosite. Juniper can be expected on a Deep Sand CP-3 site, however, their increase and the apparent increase in Sandbur places this in moderate.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desirable grasses made seed in 2006. Although inconclusive with this visit, it appears that the lack of expected grasses may be a result of past grazing practices (timing, duration and intensity) that reduced the capability of these grasses to produce seed and maintain vigor.					
S	Physical/Chemical/Biological Crusts			X		
Comments:	Mostly confined to protected areas.					
B	Wildlife Habitat				X	
Comments:	The area is no longer habitat for antelope. It does provide good habitat for mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	5	3	2
H	Hydrologic	0	0	4	5	2
B	Biotic	0	0	4	4	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should

most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	5	5
Hydrologic		0	4	7
Biotic		0	4	9

Site Notes: This site more closely fits a Deep Sand CP-3. Even so, this sandy site shows some departures from the ESD. Productivity on the site has greatly diminished from the expected even though the current plant community appears vigorous. Juniper appears to have increased on the site and will likely increase without treatment. Bluestems are absent from the site and dropseeds are much reduced from the expected amounts. Threeawns are becoming the dominant grass and sandbur appears to be increasing (based on the data). Hummocks are noticable which suggests wind deposition areas. The area is no longer habitat for antelope, but does provide good habitat for mule deer.

Plants encountered included: trees: juniper shrubs: QUHA, GUSA2, OPUNT (cholla), RHMI, YUCCA, forbs: RUMEX spp. (dock), CRYPTANTHA, LINARIA spp. (toadflax) grasses: SPCR,SPCO4, ARDI5, ARPU9, VULPIA spp., BOCU

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64028-#6-2-N018

Legal Land Desc	NWSW 6 0090S 0210E Meridian 23	Acreage	
Ecosite	070BY062NM SHALLOW SAND CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; DILLEY	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	IBB	Soil Taxon Name	IMA
Texture Class	NM644 CB-FSL	Soil Phase	IMA-BLAKENEY
Texture Modifier	NM644 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01

Disturbances and Animal Use:	A two track road passes through the site. No livestock were present and there was no apparent use. Deer browsing was evident.

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns				X	
Comments:	Mostly short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	There is pedestalling, mostly in flow patterns.					
S H	Bare Ground					X
Comments:	Less than expected in the ESD.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Litter is being displaced.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:	Evidence of past soil loss as indicated by pedesals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments:	There is an increase in the woody plant component (Juniper and Rhus). Herbaceous ground cover is less than expected according to the data.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	There is a significant increase in shrubs and juniper is encroaching. There has been					

	a shift in grass composition. According to the data, threeawns are the dominant grasses. Blue, black and sideoats grama are deficient in the composit					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:	Less than expected, but not a lot less.					
B	Annual Production			X		
Comments:	2006 had higher than normal late growing precip that allowed plants to be very vigorous and productive. Even so, the site falls short of its production potential as indicated in the ESD. The data would indicate an even greater departure.					
B	Invasive Plants			X		
Comments:	Juniper are scattered throughout the site.					
B	Reproductive Capability of Perennial Plants					X
Comments:	For this visit, it appears there are no restrictions in reproductive capability, however, the lack of or reduction of desireable grasses suggests this has been a problem.					
S	Physical/Chemical/Biological Crusts			X		
Comments:	Biotic crusts are rare.					
B	Wildlife Habitat				X	
Comments:	The ESD regards this ecosite as habitat for antelope. This site is no longer suitable for antelope but does provide fair to good habitat for mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	4	5

H	Hydrologic	0	0	2	5	4
B	Biotic	0	0	4	4	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils remain relatively stable inspite of the biotic changes.	0	1	9
Hydrologic		0	2	9
Biotic	The area shows substantial departures for several indicators. With continued shrub and tree encroachment, a downward trend can be expected.	0	4	9

Site Notes: Soils on this site remain relatively stable, however, the site has a number of moderate departures from the ESD that mostly relate to the hydrologic function and biotic integrity. Shrubs and half shrubs (shinnery oak, little leaf sumac, and snakeweed) are increasing (approx 4 times the expected amount in the ESD); juniper is invading. The grass community has shifted substantially from what is described in the ESD. According to the data, threeawns are now the dominant grasses and gramas are minimal in the composition.

Plants encountered included: trees: Juniper shrubs: QUHA, RHMI, GUSA2 forbs: Cryptantha spp., others grasses: ARDI, ARPU, MUSQ, ERPU8, MUAR, SPCR

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64028-#7-F104

Legal Land Desc	NWNE 31 0080S 0210E Meridian 23	Acreage	809
Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON; REBITZKI	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	EaC	Soil Taxon Name	ECTOR
Texture Class	NM644 CBV-L	Soil Phase	ECTOR
Texture Modifier	NM644 VERY COBBLY		

	LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.55	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.73	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Cattle and sheep were in the pasture at the time of the visit. Current use was generally light with moderate use on black and blue grama.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns				X	
Comments:	flow patterns are short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	No terracettes. Active pedestalling is rare. Past pedestalling is evident mostly in flow patterns.					
S H	Bare Ground					X
Comments:	Less than expected. There is lots of surface rock.					
S H	Gullies					X
Comments:	None on site.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	There is some displacement.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate aggregate stability. Surface rock lends stability to the site.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	There has been some soil loss as indicated by pedestals.					
H	Plant Community Composition					X

	and Distribution Relative to Infiltration and Runoff					
Comments:	Herbaceous ground cover is as expected for the site with good distribution.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	There has been a shift in the grass community. Threeawns are the dominant grass. Black grama is substantially reduced from expected but is still adequately represented.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Exceeds expected.					
B	Annual Production				X	
Comments:	2006 had better than normal late growing season precip. Production is estimated to be between 60 - 80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla are widely scattered throughout the site. This appears to be trending toward moderate.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desirable grasses produced seed in 2006. This, however, may have been a problem over the years, which would have contributed to the decline in desirable forage grasses.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Biotic crusts are evident throughout the site but are not continuous.					
B	Wildlife Habitat					X
Comments:	Provides satisfactory habitat for mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	5	6
B	Biotic	0	0	0	6	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable. There is lots of surface rock lending stability to the site.	0	0	10
Hydrologic		0	0	11
Biotic	Biotic integrity rates fairly well, however, there has been a shift in the grass community. Threeawns are now the dominant grasses and black and other gramas are reduced from expected.	0	0	13

Site Notes: Soils are relatively stable. There is very little evidence of active erosioin. There has been some soil loss as indicated by pedestalling. The large amount of surface rock lends stability to the site.

There has been a shift in the grass community. Threeawns are now the dominant grasses. Black and other gramas are significantly reduced. Areas with less surface rock have high densities of burro grass. Forb production was low.

Plants encountered included:

shrubs: GUSA, OPUNT (cholla and prickly pear), RHMI, DAFO, MIAC forbs: verbena, ERIGE, Antennaria spp. (pussytoes), others grasses: MUSQ, EUPU8, BOGR2, BOER, TRPI, PAHA, ARPU, ARIST, SCBR, MUAR, SPCR

Determination of Public Land (Rangeland) Health for 64028 EAST CEDAR HILL

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. Based on these assessments, it is my determination that public land within East Cedar Hill allotment #64028, meets the (1) Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered, and Special Status Species standard. There are no public land Riparian areas on this allotment, therefore this standard was not addressed.

/s/ EDDIE BATESON	08/24/2007
Assistant Field Manager	Date